IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 – 23. (Canceled)

24.   (Previously presented) A method for modifying an audio signal comprising a plurality of channel signals, the method comprising:

transforming at least selected ones of the channel signals into a time-frequency domain;

comparing said at least selected ones of the channel signals in the time-frequency domain to identify corresponding portions of said channel signals that are not correlated or are only weakly correlated across channels; and

modifying the identified corresponding portions of said channel signals, wherein the step of modifying comprises:

determining for each channel an input ratio in which the numerator comprises a measure of said portions of the channel signal that are uncorrelated or weakly correlated and the denominator comprises a measure of the overall channel signal;

receiving a user input indicating a desired output ratio of uncorrelated or weakly correlated portions to total signal; and

applying to said portions of said channel signals that are uncorrelated or weakly correlated a modification factor calculated to modify the channel signals as required to achieve the desired output ratio indicated by the user.

25.   (Original) The method of claim 24, wherein determining for each channel an input ratio comprises:

extracting the uncorrelated or weakly correlated portions from the overall signal;

determining the energy level of the uncorrelated or weakly correlated portions;

determining the energy level of the overall signal; and

dividing the energy level of the uncorrelated or weakly correlated portions by the energy level of the overall signal.

26.   (Original) The method of claim 25, wherein the modification factor comprises the square root of the result obtained by dividing the user-indicated ratio by the input ratio.

27 – 33. (Canceled)

34.   (Previously presented) A method for providing a generated signal to a playback channel of a multichannel playback system, the method comprising:

receiving an input audio signal comprising a plurality of input channel signals;

transforming at least selected ones of the input channel signals into a time-frequency domain;

comparing said at least selected ones of the input channel signals in the time-frequency domain to identify corresponding portions of said input channel signals that are not correlated or are only weakly correlated;

extracting from each of said input channel signals the identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated;

combining the extracted portions, including:

determining the magnitude of the respective portions of said input channel signals that are not correlated or are only weakly correlated;

taking the absolute difference of the magnitude values; and

applying a phase to the result of the absolute difference; and

providing to the playback channel a signal comprising at least in part said extracted and combined identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated.

35.   (Original) The method of claim 34, wherein combining the extracted portions comprises taking the difference between the corresponding extracted portions.

36.   (Original) The method of claim 34, wherein the playback channel comprises a first playback channel and further comprising providing to at least one additional playback channel a signal comprising at least in part said extracted and combined identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated.

37.   (Original) The method of claim 36, further comprising decorrelating the signal provided to said first playback channel and the signal provided to said at least one additional playback channel.

38.   (Original) The method of claim 37, wherein decorrelating the signal provided to said first playback channel and the signal provided to said at least one additional playback channel comprises processing the signal provided to each respective playback channel using an allpass filter configured to apply a phase adjustment that is different than the phase adjustment applied to the respective signals provided to the other playback channel(s).

39.   (Original) The method of claim 37, wherein decorrelating the signal provided to said first playback channel and the signal provided to said at least one additional playback channel comprises processing the signal provided to each respective playback channel using a delay line configured to apply a delay that is different than the delay applied to the respective signals provided to the other playback channel(s).

40.   (Original) The method of claim 34, further comprising modifying the extracted and combined portions prior to providing them to the playback channel.

41.   (Original) The method of claim 40, wherein the modification is determined at least in part by a user input.

42.   (Original) The method of claim 41, wherein the user input determines at least in part the gain of an amplifier used to process the extracted and combined portions.

43.   (Original) The method of claim 41, wherein the user input determines at least in part a bandwidth within which the modification is performed.

44.   (Original) The method of claim 43, wherein the bandwidth is implemented by processing the extracted and combined portions using a bandpass filter and the user input determines at least in part the lower and upper boundary frequencies of the bandpass filter.

45.   (Original) The method of claim 34, wherein the steps of extracting and combining comprise determining the magnitude of the respective portions of said input channel signals that

are not correlated or are only weakly correlated, taking the absolute difference of the magnitude values, and applying the phase of one of the input channels to the result.

46.   (Previously presented) The method of claim 34, wherein one of the plurality of input channel signals corresponds to the playback channel and wherein the signal provided to the playback channel further comprises the corresponding input channel signal.

47 – 49. (Canceled)

50.   (New) A system for modifying an audio signal comprising a plurality of channel signals, the system comprising:

a transformer configured to transform at least selected ones of the channel signals into a time-frequency domain;

an analyzer configured to compare said at least selected ones of the channel signals in the time-frequency domain to identify corresponding portions of said channel signals that are not correlated or are only weakly correlated across channels; and

a modifier configured to modify the identified corresponding portions of said channel signals, wherein the modifier is configured to modify by:

determining for each channel an input ratio in which the numerator comprises a measure of said portions of the channel signal that are uncorrelated or weakly correlated and the denominator comprises a measure of the overall channel signal;

receiving a user input indicating a desired output ratio of uncorrelated or weakly correlated portions to total signal; and

applying to said portions of said channel signals that are uncorrelated or weakly correlated a modification factor calculated to modify the channel signals as required to achieve the desired output ratio indicated by the user.

51.   (New) A computer program product for modifying an audio signal comprising a plurality of channel signals, the computer program product being embodied in a computer readable medium and comprising computer instructions for:

transforming at least selected ones of the channel signals into a time-frequency domain;

comparing said at least selected ones of the channel signals in the time-frequency domain to identify corresponding portions of said channel signals that are not correlated or are only weakly correlated across channels; and

modifying the identified corresponding portions of said channel signals, wherein the computer instructions for modifying include computer instructions for:

determining for each channel an input ratio in which the numerator comprises a measure of said portions of the channel signal that are uncorrelated or weakly correlated and the denominator comprises a measure of the overall channel signal;

receiving a user input indicating a desired output ratio of uncorrelated or weakly correlated portions to total signal; and

applying to said portions of said channel signals that are uncorrelated or weakly correlated a modification factor calculated to modify the channel signals as required to achieve the desired output ratio indicated by the user.

52. (New) A system for providing a generated signal to a playback channel of a multichannel playback system, the system comprising:

an input interface configured to receive an input audio signal comprising a plurality of input channel signals;

a signal processor configured to:

transform at least selected ones of the input channel signals into a time-frequency domain;

compare said at least selected ones of the input channel signals in the time-frequency domain to identify corresponding portions of said input channel signals that are not correlated or are only weakly correlated;

extract from each of said input channel signals the identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated; and

combine the extracted portions, including:

determining the magnitude of the respective portions of said input channel signals that are not correlated or are only weakly correlated;

taking the absolute difference of the magnitude values; and

applying a phase to the result of the absolute difference; and

an output interface configured to provide to the playback channel a signal comprising at least in part said extracted and combined identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated.

53.   (New) A computer program product for providing a generated signal to a playback channel of a multichannel playback system, the computer program product being embodied in a computer readable medium and comprising computer instructions for:

receiving an input audio signal comprising a plurality of input channel signals;

transforming at least selected ones of the input channel signals into a time-frequency domain;

comparing said at least selected ones of the input channel signals in the time-frequency domain to identify corresponding portions of said input channel signals that are not correlated or are only weakly correlated;

extracting from each of said input channel signals the identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated;

combining the extracted portions, wherein the computer instructions for combining include computer instructions for:

determining the magnitude of the respective portions of said input channel signals that are not correlated or are only weakly correlated;

taking the absolute difference of the magnitude values; and

applying a phase to the result of the absolute difference; and

providing to the playback channel a signal comprising at least in part said extracted and combined identified corresponding portions of said input channel signals that are not correlated or are only weakly correlated.